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BIOGEOGRAPHY, *Huia* (*absita* n. sp., *melasma* n. sp., *masonii*, *javana* = *masonii*) (theory of speciation of *H. absita* from *H. masonii*) 279-289; *Cyprinodon* (24 of 29 SW. N. Amer. spp., 11 of 20 E. N. Amer. & W. Indies spp.), *Jordanella floridae*, *Cualac tesselatus*, *Megapsilon aporus* (histor. biogeogr., mtDNA data) 320-339; *Phallotorynus* (*fasciatus*, *victoriae*, *jucundus*, *dispolis* n. sp., *psittacus* n. sp., *pankalos* n. sp.) (histor. biogeogr. hypoths. rel. to clad. anal. of spp. in previous paper) 609-631; *Bungarus* (*bungarooides*, *slowinskii* n. sp.) (vicariant model of speciation of n. sp. from *B. bungarooides*) 818-833.

CALLS, *Scaphiophryne menabensis* n. sp. (sonogram, oscillogram compared to congeners) 252-261; *Albericus exclamans* n. sp. (call unique in genus, descript., waveform & spectrogram) 312-319.

CHEMORECEPTION, *Hyla versicolor* (pred. chem. cues at egg stage aff. larval develop.) 169-173; *Vermicella annulata*, *Ramphotyphlops nigrescens* (preds. [*V. annulata*] follow chem. trails of prey [*R. nigrescens*]) 184-187.

CHROMOSOMES, *Oncorhynchus mykiss* (evid. that $2n = 58$ is ancestral, all $2n = 58$ fish have same karyotype) 661-664.

COLONIZATION, *Eleutherodactylus johnstonei* (reprod. ecol. of introd. popn., success as invader rel. to reprod. flex.) 642-648.

COLORATION, *Mantidactylus (elegans, madagascariensis)*, *Boophis laurenti* (dark color corel. w/ high altitude in tpls.) 174-183; *Ensatinia eschscholtzii xanthoptica* (evid. for aposematic coloration, possible Batesian mimicry) 265-271; *Aspidoscelis inornata*, *Holbrookia maculata*, *Sceloporus undulatus* (color var. btwn. habs. mostly genetic) 586-596; *Sceloporus undulatus* (sex. dichromatism regulated by testosterone) 597-608.

CONSERVATION, *Cyprinodon tularosa* (transloc. of thrtnd. sp. to new habs., body shape chngs., mngrnt. implics.) 1-11; *Notropis mekistocholas* (genet. effs. of captive propagation) 20-28; *Notropis topeka*, *Micropterus salmoides* (cons. implics. of introd. *M. salmoides* pred. on endngrd. *N. topeka*) 38-47; *Pogonichthys macrolepidotus* (habitat requirements of young-of-yr., import. conserv. implics.) 159-168; *Scaphiophryne menabensis* n. sp. (highly endngrd. ecosystem) 252-261; *Lepidochelys kempii* (female bias in popn. due to incub. temp., import. in conserv. mngrnt.) 393-398; *Agkistrodon piscivorus* (import. of buffer zones around riparian habs.) 399-402; freshwater stream fishes (49 spp.) (conserv. mngrnt. recommends. from fish assemblage study of small tropical streams) 751-764; 9 SE U.S. snake spp. (conserv. implics. of road-crossing beh.) 772-782; *Noturus (fasciatus* n. sp., *crypticus* n. sp.) (cons. status) 783-802; *Boa constrictor* (island snakes differ from mainland popns., island popns. endngrd. by pet trade) 880-885; *Hoplocephalus bungaroides*, *Oedura lesuerii* (conserv. implics. of fire suppression on endngrd. sp. & its prey sp.) 894-900.

DENTITION, *Lobotes surinamensis*, *Datnioides quadriseriatus* (oral jaws w/ dentition, unique tooth replcmnt. ptnr.) 665-672; *Parodon moreirai* n. sp. (dental teeth reduced & sometimes absent in n. sp., discuss sim. to *Apareiodon*) 765-771.

DEVELOPMENT, *Hyla versicolor* (pred. chem. cues at egg stage aff. larval dev.) 169-173; *Danio rerio* (aggres. beh. aff. by hypoxic environ. during devel., interacts. btwn. testing & devel. invirons.) 901-908.

DIGESTION, *Dipsosaurus dorsalis* (var. in thermoreg. beh. rel. to herbiv. vs. carniv. diets) 12-19.

DISTRIBUTION, *Barbodes laticeps* = *Linichthys* n. gen. *laticeps* 61-67; *Trichomycterus gorgona* n. sp. (only island Trichomycterid) 68-76; *Gymnotus (obscurus* n. sp. [very limited], *varzea* n. sp., *cucupira* n. sp.) 82-99; *Silvinichthys bortayro* n. sp. (very limited) 100-108; *Pseudanos (winterbottomi* n. sp., *gracilis*) 109-123; *Symbolophorus (reversus*

n. sp., *evermanni*) (n. sp. & 7 congeners, much overlap btwn. spp.) 138–145; *Pogonichthys macrolepidotus* (young-of-yr. further upstream than previous evid., conserv. implics.) 159–168; *Bolitoglossa* (*anthracina*, *copia*, *nigrescens*, *robusta*, *magnifica* n. sp., *obscura* n. sp., *sombra* n. sp.) (details incl. altitude) 227–245; *Acentrophryne* (*longidens*, *dolichonema* n. sp.) (notes) 246–251; *Scaphiophryne* *menabensis* n. sp. (details) 252–261; *Jupiaba poekotero* n. sp. (details of limited distrib.) 272–278; *Huia* (*absita* n. sp., *melasma* n. sp., *masonii*) (map of type localities) 279–289; *Puntius* (*tianian* n. sp., *didi* n. sp.) 290–302; *Albericus exclamitanus* n. sp. (very limited) 312–319; *Myxine* (*jespersenae* n. sp., *glutinosa*) (incl. depth) 374–385; *Bryconamericus turiuba* n. sp. 386–392; *Asterorhombus* (7 spp.: 3 removed to *Engyprosopon*, *A. fijiensis* = *A. cecosensis*) (the 3 spp. have 2 pttns. of distrib.) 445–460; *Etropus ciadi* n. sp. (map of localities) 470–478; *Phrynoporus* (*bifurcatus* n. sp., *pauacari* n. sp., *pesantisi* n. sp.) (type locs. of n. spp. & all other Peruvian *Phrynoporus*) 479–491; *Brachyplatystoma capapretum* n. sp. (map of localities) 492–516; *Eleutherodactylus* (*bipunctatus* n. sp., *anisopteraleptus* n. sp., *rhabdocnemus* n. sp., *stictogaster* n. sp.) (of n. sp., distr. pttns. of eleutherodactyline sp. groups in Peru) 526–538; *Pareiorhina* (*brachyrhyncha* n. sp., *rudolphi*) (n. sp. sympatric w/ *P. rudolphi*) 550–558; *Sturisoma kneri* n. sp. (limited) 559–565; *Clarias nuijiangense* n. sp. (limited) 566–570; *Phallotorynus* (*fasciolatus*, *victoriae*, *jucundus*, *dispis* n. sp., *psittacus* n. sp., *pankalos* n. sp.) (map of localities) 609–631; *Lepthoplosternum* (*stellatum* n. sp., *ucamara* n. sp., *altamazonicum*) (map of localities) 724–731; *Pseudomystus sobrinus* n. sp. (map of localities) 745–750; *Parodon moreirai* n. sp. 765–771; *Noturus* (*fasciatus* n. sp., *crypticus* n. sp.) (very limited, esp. *N. crypticus*, evid. for reduction in *N. fasciatus*) 783–802; *Creagrutus guanes* n. sp. 812–817; *Bungarus* (*bungaroidea*, *slownskii* n. sp.) (map of localities) 818–833; *Mustelus* (*hacat* n. sp., *californicus*, *henlei*, *lunulatus*, *dorsalis*) (notes, incl. depth) 834–845; *Glanidium bockmanni* n. sp. (map of localities) 846–853; *Hapalogenys* (*sennini* n. sp., *nigripinnis*, *nitens* = *nigripinnis*) 854–867; *Rhizoprionodon terraenovae* (seas. & yrly. chngs. in abund. in Miss. Sound, gender & age diff.) 914–920; *Atelognathus patagonicus* (endngrd. sp., extinct in large lake w/ introd. fish, common in small lakes w/out fish) 921–929.

ECOLOGY. *Gymnotus* (*carapo*, *mamiraua*) (intra- & interspecific ecol. adapt. of nest. beh.) 48–60; *Trichomycterus* *gorgona* n. sp. (notes) 68–76; *Gymnotus* (*obscurus* n. sp., *varzea* n. sp., *cucupira* n. sp.) (detailed notes on hab.) 82–99; *Silvinichthys* *bortayno* n. sp. (phreatic catfish, ecol. notes) 100–108; *Crotalus atrox* (reprod. ecol.) 152–158; *Pogonichthys macrolepidotus* (young-of-yr. further upstream than previous evid., conserv. implics.) 159–168; *Jupiaba poekotero* n. sp. (notes) 272–278; *Huia* (*absita* n. sp., *melasma* n.

sp., *masonii*, *javana* = *masonii*) (notes) 279–289; *Puntius* (*tianian* n. sp., *didi* n. sp.) (notes) 290–302; *Albericus exclamitanus* n. sp. (notes) 312–319; *Bryconamericus turiuba* n. sp. (notes) 386–392; *Agkistrodon piscivorus* (import. of buffer zones around riparian habs.) 399–402; *Astyanax mexicanus* (gene flow btwn. cave & surface popns.) 409–416; Neosho R., Kansas, shallow-water fish spp. (31 spp., 10 fams.) (fish assemblage struct. aff. by low-head dams, seas. var.) 539–549; *Lapemis curtus* (diel var. in stom. conts., no geogr. var., evid. for ambush foraging) 637–641; *Eleutherodactylus johnstonei* (reprod. ecol. of introd. popn., success as invader rel. to reprod. flex.) 642–648; freshwater stream fishes (49 spp.) (small hab. diff. w/in small tropical streams strongly aff. fish assemblage) 751–764; 9 SE U.S. snake spp. (interspp. diff. in ecol. aff. road-crossing success) 772–782; *Noturus* (*fasciatus* n. sp., *crypticus* n. sp.) (notes) 783–802; *Leptodactylus labyrinthicus* (of larval devel. in foam nests & after leave nests, oophagy) 803–811; *Creagrutus guanes* n. sp. (notes) 812–817; *Boa constrictor* (island compared to mainland popns., great diff.) 880–885; *Atelognathus patagonicus* (microhab., densities, reprod. seas., % aquatic & littoral adult forms, evid. of disease in lg. % of metamorphic tpls. & metamorphs) 921–929.

EGGS. *Hyla versicolor* (pred. chem. cues at egg stage aff. larval develop.) 169–173; *Heterodontus omaniensis* n. sp. (unique egg case) 262–264; *Malaclemys terrapin* (compare size & components among clutches) 417–423; *Lampropholis* (*guichenoti*, *delicata*), *Physignathus lesueuri* (egg shell chem. comp. & struct., *P. lesueuri* shares 1 trait w/ the Tuatara) 683–692; *Leptodactylus labyrinthicus* (oophagy both w/in foam nests & after tpls. leave nests) 803–811; *Kinosternon subrubrum*, *Sternotherus odoratus*, *Pseudemys floridana* (clutch & egg size var. rel. to optimal egg-size & phenotypic plasticity models of reprod. allocation) 868–879.

ELECTRIC ORGAN. *Gymnotus* (*carapo*, *mamiraua*) (descripts. of dischgs. for larvae & adults, rel. to nest. beh.) 48–69; *Gymnotus* (*obscurus* n. sp., *varzea* n. sp., *cucupira* n. sp.) (anat. & dischg. wave forms disting. spp.) 82–99.

ENDANGERED SPECIES. *Cyprinodon tularosa* (transloc. of thrndt. sp. to new hab., body shape chngs.) 1–11; *Notropis mekistocholas* (large effective popn. size in captive popn.) 20–28; *Notropis topeka*, *Micropterus salmoides*, *Cyprinella lutrensis*, *Pimephales notatus*, *Luxilus cornutus* (endngrd. *N. topeka* more affected by introd. *M. salmoides* pred. than other minnows) 38–47; *Lepidocheles kempfii* (female bias in FL popn. due to incub. temp., import. in conserv. mngrmnt.) 393–398; *Phallotorynus* (*fasciolatus*, *victoriae*, *jucundus*, *dispis* n. sp., *psittacus* n. sp., *pankalos* n. sp.) (possibly extinct) 609–631; *Noturus* (*crypticus* n. sp. (probably relict popn., needs Fed. protection) 783–802; *Boa constrictor* (island snakes differ from mainland popns., extremely small

popn. sizes, declining, island popns. should be listed as endngrd. in IUCN Red List) 880–885; *Hoplocephalus bungaroides*, *Oedura lesuerii* (conserv. implics. of fire suppression on endngrd. sp. & its prey sp.) 894–900; *Atelognathus patagonicus* (extinct in lg. lake w/ introd. fish, common in small lakes w/out fish, evid. of disease in lg. % of metamorphic tpls. & metamorphs) 921–929.

EVOLUTION. *Cyprinodon tularosa* (evol. implics. of details of shape chng. in thrtnd. sp. transloc. to diff. habts.) 1–11; *Gymnotus (carapo, mamiraua)* (of electric organ dischrg. functs. rel. to nesting) 48–60; *Huia* (*absita* n. sp., *melsama* n. sp., *masonii*, *javana* = *masonii*) (theory of speciation of *H. absita* from *H. masonii*) 279–289; *Cyprinodon* (24 of 29 SW. N. Amer. spp., 11 of 20 E. N. Amer. & W. Indies spp.), *Jordanella floridana*, *Cualac tessellatus*, *Megapsilon aporus* (*Cyprinodon* evol. from *Megapsilon* during Miocene, reticulate evol., much hybrid.) 320–339; *Lepomis* (all 12 spp.) (clad. anal. w/ mtDNA data reveals system. problems w/ some spp., possible cryptic spp.) 340–346; *Coregonus* (19 popns. in 8 lakes) (of phenotype & mode of speciation, signif. of homoplasy) 347–358; *Rana dalmatina* (hypoths. on lack of male mate choice despite advntgs. for it) 403–408; *Lethrinos c.f. parvidens* (experim. evid. for sex. selection of male beh. trait) 657–660; *Bungarus* (*bungaroides*, *slowinskii* n. sp.) (biogeogr. & mtDNA evid. for vicariant speciation) 818–833; *Thamnophis elegans* (direct evid. for coadapt. of thermoreg. & thermal optima for embryo devel. & adult perform.) 930–934.

FEEDING. *Vermicella annulata*, *Ramphotyphlops nigrescens* (preds. [*V. annulata*] follow chem. trails of prey [*R. nigrescens*]) 184–187; *Elaphe quatuorlineata* (diet, seas., gender & hab. diff.) 517–525; *Leptodactylus labyrinthicus* (oo-phagy both w/in foam nests & after tpls. leave nests) 803–811.

FOOD. *Dipsosaurus dorsalis* (herbiv. vs. carniv. diets prod. diff. pttns. of thermoreg., relates to energy conserv.) 12–19; *Gymnotus (obscurus* n. sp., *varzea* n. sp., *cucupira* n.sp.) (stom. conts.) 82–99; *Silvinichthys portayro* n. sp. (stom. conts., food taken in aquarium) 100–108; *Pseudanos (winterbottomi* n. sp., *gracilis*) (stom. conts.) 109–123; *Jupiaba poekotero* n. sp. (notes on stom. conts.) 272–278; *Phrynosoma (bufoides* n. sp., *pesantisi* n. sp.) (stom. conts.) 479–491; *Elaphe quatuorlineata* (diet, seas., gender & hab. diff.) 517–525; *Lapemis curtus* (diel var. in stom. conts., no geogr. var., evid. for ambush foraging) 637–641; *Leptodactylus labyrinthicus* (oo-phagy both w/in foam nests & after tpls. leave nests) 803–811; *Glanidium bockmanni* n. sp. (stom. conts. of 2 specimens) 846–853; *Boa constrictor* (diet diff. btwn. island & mainland popns.) 880–885.

GENETICS. *Cyprinodon tularosa* (genet. implics. of details of shape chng. in thrtnd. sp. transloc. to diff. habts.) 1–11; *Notropis mekistocholas* (gen. var.

in captive vs. wild popns.) 20–28; *Astyanax mexicanus* (gene flow btwn. cave & surface popns.) 409–416; *Oncorhynchus mykiss* (evid. that $2n = 58$ is ancestral, all $2n = 58$ fish have same karyotype) 661–664.

GEOGRAPHIC LOCALITIES,

Alabama, *Rhizoprionodon terraenovae* (Miss. Sound) 914–920.

Alaska, *Oncorhynchus mykiss* 661–664.

Amazon River, *Brachyplatystoma capapretum* n. sp. 492–516.

Arabian Sea, *Heterodontus omanensis* n. sp. 262–264.

Argentina, *Silvinichthys portayro* n. sp. 100–108; *Phallotrynus victoriae* 609–631; *Atelognathus patagonicus* 921–929.

Arizona, *Crotalus atrox* 152–158.

Atlantic Ocean, *Lasiognathus amphirhamphus* n. sp. (NE) 77–81; *Myxine (jespersenae* n. sp., *glutinosa*) (N) 374–385.

Australia, *Vermicella annulata*, *Ramphotyphlops nigrescens* (NSW) 184–187; *Litoria (genimaculata, lesueuri)* (QLD) 188–195; *Lampropholis (guichenoti, delicata)*, *Physignathus lesueuri* (NSW) 683–692; *Hoplocephalus bungaroides*, *Oedura lesueuri* (NSW) 894–900.

Belize, *Boa constrictor* 880–885.

Bering Sea, *Ptilichthys goodei* 571–585.

Brazil, *Gymnotus mamiraua* 48–60; *Gymnotus (obscurus* n. sp., *varzea* n. sp., *cucupira* n.sp.) 82–99; *Pseudanos (winterbottomi* n. sp., *gracilis*) 109–123; *Nemuroglanis (lanceolatus, pauciradiatus)* 124–137; *Jupiaba poekotero* n. sp. 272–278; *Bryconamericus turiuba* n. sp. 386–392; *Brachyplatystoma capapretum* n. sp. 492–516; *Pareiorhina (brachyhyncha* n. sp., *rudolphi*) 550–558; *Phallotrynus (fasciolatus, victoriae, jucundus, pankalos* n. sp.) 609–631; *Megalechis personata* = *M. thoracata*, *Megalechis thoracata* = *M. picta* 678–682; *Lepthoplosternum (stellatum* n. sp., *ucamarae* n. sp., *altamazonicum*) 724–731; freshwater stream fishes (49 spp.) 751–764; *Parodon moreirai* n. sp. 765–771; *Leptodactylus labyrinthicus* 803–811; *Glanidium bockmanni* n. sp. 846–853.

California, *Dipsosaurus dorsalis* 12–19; *Alopis vulpinus* 146–151; *Pogonichthys macrolepidotus* 159–168; *Acentrophryne* sp. (Miocene fossil) 246–251; *Ensatina escholtzii xanthoptica* 265–271; *Oncorhynchus mykiss* 661–664; *Thamnophis elegans* 930–934.

Canada, *Rana (septentrionalis, sylvatica)* (Man.) 188–195.

China, *Barbodes laticeps* = *Linichthys* n. gen. *laticeps* 61–67; *Clarias nuijangense* n. sp. 566–570; *Hapalogrenys (nigripinnis, nitens* = *nigripinnis*) 854–867.

China Sea, *Hapalogrenys (nigripinnis, nitens* = *nigripinnis*) 854–867.

Colombia, *Trichomycterus gorgona* n. sp. (Gorgona Is.) 68–76; *Imparatus mariae* & *Medemicthys guayaberensis* = *Nemuroglanis mariae* 124–137; *Eleutherodactylus johnstonei* 642–648; *Creagrutus guaneus* n. sp. 812–817.

- Costa Rica.** *Bolitoglossa* (*nigrescens*, *robusta*, *obscura* n. sp., *sombra* n. sp.) 227–245; *Acentrophryne longidens* (Pacific O.) 246–251.
- East China Sea.** *Hapalogenys* (*nigripinnis*, *nitens* = *nigripinnis*) 854–867.
- Ecuador.** *Nemuroglanis lanceolatus* 124–137.
- Florida.** *Sistrurus miliaris* 196–200; *Jordanella floridae* 320–339; *Lepidochelys kempii* 393–398; *Heterandria formosa* 649–656.
- French Guiana.** *Megalechis personata* = *M. thoracata* 678–682.
- Gorgona Is., Colombia.** *Trichomycterus gorgona* n. sp. 68–76.
- Greenland.** *Myxine* (*jespersenae* n. sp., *glutinosa*) 374–385.
- Gulf of California.** *Etropus ciadi* n. sp. 470–478; *Mustelus* (*hacat* n. sp., *californicus*, *henlei*, *lunulatus*, *dorsalis*) 834–845.
- Gulf of Masira.** *Heterodontus omanensis* n. sp. 262–264.
- Gulf of Mexico.** *Rhizoprionodon terraenovae* (Miss. Sound) 914–920.
- Gulf of Panama.** *Acentrophryne longidens* 246–251.
- Guyana.** *Megalechis personata* = *M. thoracata*, *Megalechis thoracata* = *M. picta* 678–682.
- Hungary.** *Rana dalmatina* 403–408.
- Iceland.** *Myxine jespersenae* n. sp. 374–385.
- Idaho.** *Oncorhynchus mykiss* 661–664.
- India.** *Philautus* (*bobingeri* n. sp., *graminirupes* n. sp.) 29–37; *Lapemis curtus* 637–641; *Bungarus bungaroides* 818–833.
- Indian Ocean.** *Symbolophorus evermanni* 138–145; *Asterorhombus* (7 spp.: 3 removed to *Engyprospon*, *A. fijiensis* = *A. cocosensis*) (margins & islands) 445–460.
- Indonesia.** *Huia* (*masonii*, *javana* = *masonii*) (Java) 279–280; *Bathygobius* (*fuscus*, sp.), *Periophthalmodon kalolo* (island off Sulawesi) 886–893.
- Italy.** *Elaphe quatuorlineata* 517–525.
- Japan.** *Hapalogenys* (*sennin* n. sp., *nigripinnis*, *nitens* = *nigripinnis*) 854–867.
- Java.** *Huia* (*masonii*, *javana* = *masonii*) 279–289.
- Kansas.** *Notropis topeka*, *Micropterus salmoides*, *Cyprinella lutrensis*, *Pimephales notatus*, *Luxilus cornutus* 38–47; Neosho R., Kansas, shallow-water fish spp. (31 spp., 10 fams.) 539–549.
- Korea.** *Hapalogenys* (*nigripinnis*, *nitens* = *nigripinnis*) 854–867.
- Lake Malawi.** Cichlids (48 spp.) 359–373; *Lethrinops* c.f. *parvidens* 657–660.
- Lake Tanganyika.** Cichlids (48 spp.) 359–373.
- Laos.** *Huia absita* n. sp. 279–289.
- Madagascar.** *Mantidactylus* (*elegans*, *madecassus*), *Boophis laurenti* 174–183; *Scaphiophryne* (*menabensis* n. sp., *marmorata*, *madagascariensis*) 252–261.
- Madeira Abyssal Plain.** *Lasiognathus amphirhamphus* n. sp. 77–81.
- Madeira Is.** *Lasiognathus amphirhamphus* n. sp. 77–81.
- Malawi.** *Lethrinops* c.f. *parvidens* 657–660.
- Maryland.** *Malaclemys terrapin* 417–423.
- Mexico.** *Cualac tesselatus* (San Luis Pot.), *Megapsilon aporus* (Nuevo Leon) 320–339; *Astyanax mexicanus* (Taum., San Luis Pot.) 409–416; *Pseudourycea* (*papenfussi* n. sp., *obesa* n. sp.) (Oax.) 461–469; *Etropus ciadi* n. sp. (Gulf of Cal., Baja Cal., Sin.) 470–478; *Mustelus* (*hacat* n. sp., *californicus*, *henlei*, *lunulatus*, *dorsalis*) (Gulf of Cal.) 834–845.
- Michigan.** *Rana sylvatica*, *Anax junius* 909–913.
- Mississippi.** *Rhizoprionodon terraenovae* (Miss. Sound) 914–920.
- Mississippi Sound.** *Rhizoprionodon terraenovae* 914–920.
- Missouri.** *Hyla versicolor* 169–173.
- Myanmar.** *Puntius* (*tictanian* n. sp., *didi* n. sp.) 290–302; *Bungarus bungaroides* 818–833.
- New Jersey.** *Sceloporus undulatus* 597–608.
- New Mexico.** *Cyprinodon tularosa* 1–11; *Aspidoscelis inornata*, *Holbrookia maculata*, *Sceloporus undulatus* 586–596.
- North Carolina.** *Notropis mekistocholas* 20–28.
- Oman.** *Heterodontus omanensis* n. sp. 262–264.
- Oregon.** *Hyla regilla* 424–430.
- Pacific Ocean.** *Trichomycterus gorgona* n. sp. (Gorgona Is., Colombia) 68–76; *Symbolophorus* (*reversus* n. sp. [E & central], *evermanni* [W & central]) 138–145; *Acentrophryne longidens* (Gulf of Panama & off Costa Rica), *dolichonema* n. sp. [off Peru] 246–251; *Asterorhombus* (7 spp.: 3 removed to *Engyprospon*, *A. fijiensis* = *A. cocosensis*) (W: margins & marginal islands, all 3 spp.; central islands only *A. filifer*) 445–460; *Ptilichthys goodei* (N, near shore) 571–585.
- Panama.** *Bolitoglossa copia* n. sp. 223–226, 227–245; *Bolitoglossa* (*anthracina*, *robusta*, *magnifica* n. sp., *sombra* n. sp.) 227–245.
- Papua-New Guinea.** *Albericus exclamitans* n. sp. 312–319; *Dascyllus melanurus* 732–744.
- Paraguay.** *Phallotrynus* (*victoriae*, *dispilos* n. sp., *psittacus* n. sp.) 609–631.
- Peru.** *Gymnotus* (*varzea* n. sp., *cucupira* n.sp.) 82–99; *Nemuroglanis lanceolatus* 124–137; *Acentrophryne dolichonema* n. sp. (Pacific O.) 246–251; *Phrynopterus* (*bifossides* n. sp., *paucari* n. sp., *pesantisi* n. sp.) 479–491; *Brachyplatystoma capareatum* n. sp. 492–516; *Eleutherodactylus* (*bipunctatus* n. sp., *aniptopalma* n. sp., *rhabdocephalus* n. sp., *stictogaster* n. sp.) 526–538; *Microlophus peruvianus* 713–723; *Leptophlosternum* (*ucamara* n. sp., *altamazonicum*) 724–731.
- Sea of Japan.** *Ptilichthys goodei* 571–585; *Hapalogenys* (*sennin* n. sp., *nigripinnis*, *nitens* = *nigripinnis*) 854–867.
- South Carolina.** 9 SE U.S. snake spp. 772–782; *Kinosternon subrubrum*, *Sternotherus odoratus*, *Pseudemys floridana* 868–879.
- Suriname.** *Megalechis personata* = *M. thoracata* 678–682.
- Switzerland.** *Coregonus* (19 popns. in 8 lakes) 347–358.
- Taiwan.** *Hapalogenys* (*nigripinnis*, *nitens* = *nigripinnis*) 854–867.
- Tennessee.** *Noturus* (*elegans*, *fasciatus* n. sp., *crypticus* n. sp.) 783–802.
- Texas.** *Aghistrodon piscivorus* 399–402.
- Thailand.** *Huia melasma* n. sp. 279–289.

- Tibet, *Bungarus bungaroides* 818-833.
- Trinidad, *Gymnotus carapo* 48-60.
- Venezuela, *Pseudanos (winterbottomi) n. sp., gracilis* 109-123; *Nemuroglans pauciradiatus* 124-137; *Sturisoma kneri* n. sp. 559-565; *Megalechis personata* = *M. thoracata*, *Megalechis thoracata* = *M. picta* 678-682.
- Vietnam, *Pseudomystus (sobrinus) n. sp., siamensis, bombooides* 745-750; *Bungarus slowinskii* n. sp. 818-833.
- Washington, *Iopsetta isolepis* x *Parophrys vetulus* 673-677.
- GEOMETRIC MORPHOMETRICS**, *Cyprinodon tularosa* (morph. chngs. after transloc. of thrtnd. sp. to new habs.) 1-11; Cichlids (Lake Tanganyika: 48 spp., Lake Malawi: 48 spp.) (anal. of shape diversity using geometric morphometrics, greater divers. in Lake Tanganyika) 359-373.
- GROWTH**, *Pseudanos winterbottomi* n. sp. (ontogen. chngs. in proportions) 109-123; *Hyla versicolor* (pred. chem. cues at egg stage aff. larval growth & age at metamorph.) 169-173; *Hyla regilla* (eff. of var. corticosterone levels on tdpds.) 424-430.
- HABITAT**, *Cyprinodon tularosa* (shape diff. of thrtnd. sp. btwn. popns. in diff. habs.) 1-11; *Philautus (bobingeri) n. sp., graminirupes* n. sp.) (notes) 29-37; *Notropis topeka*, *Micropterus salmoides*, *Cyprinella lutrensis*, *Pimephales notatus*, *Luxilus cornutus* (minnow hab. use differs, not explains severe pred. eff. of *M. salmoides* on endngrd. *N. topeka*) 38-47; *Gymnotus (obscurus) n. sp., varzea n. sp., cucupira n. sp.* (detailed notes) 82-99; *Silurichthys bortayra* n. sp. (notes, phreatic catfish) 100-108; *Pseudanos winterbottomi* n. sp. (notes) 109-123; *Crotalus atrox* (mating hab.) 152-158; *Pogonichthys macrolepidotus* (of young-of-yr. further upstream than previous evid., conserv. implcs.) 159-168; *Mantidactylus (elegans, madecassus)*, *Boophis laurenti* (high altitude hab., descripts. of tdpds.) 174-183; *Bolitoglossa copia* n. sp. (high altitude) 223-226; *Bolitoglossa (nigrescens, robusta, magnifica) n. sp., obscura n. sp., sombra n. sp.* (notes) 227-245; *Acentrophryne (longidens, dolichonema) n. sp.* (notes) 246-251; *Scaphiophryne menabensis* n. sp. (highly endngrd. ecosystem) 252-261; *Puntius (tiitianian) n. sp., didi n. sp.* (notes) 290-302; *Albericus exclamitans* n. sp. (notes) 312-319; *Myxine (jespersenae) n. sp., glutinosa* (n. sp. deeper hab. than sympat. *M. glutinosa*) 374-385; *Bryconamericus turiuba* n. sp. (notes) 386-392; *Agirostodon piscivorus* (import. of buffer zones around riparian habs.) 399-402; *Asterorhombus* (7 spp.: 3 removed to *Engyprosopon*, *A. fijiensis* = *A. cocosensis*) (substrates, depths) 445-460; *Pseudoeurycea (paperfussi) n. sp., obesa n. sp.* (notes) 461-469; *Etropus ciadi* n. sp. (notes) 470-478; *Phrynobatrachus (bufoides) n. sp., pesantisi n. sp.* (notes, *P. pesantisi* highest elev. of genus) 479-491; *Brachyplatystoma capapretum* n. sp. (notes) 492-516; *Elaphe quatuorlineata* (hab. diff. aff. body size & diet) 517-525; *Eleutherodactylus (bipunctatus) n. sp., aniptopalmaetus* n. sp., *rhabdocnemus* n. sp., *stictogaster* n. sp.) (notes incl. altitude) 526-538; *Neosho R., Kansas*, shallow-water fish spp. (31 spp., 10 fams.) (fish assemblage struct. aff. by hab. var. due to low-head dams) 539-549; *Clarias (nuijiangense) n. sp.* (notes) 566-570; *Aspidoscelis inornata*, *Holbrookia maculata*, *Sceloporus undulatus* (color morphs in diff. habs. mostly genetic-based) 586-596; *Leptoloposternum (stellatum) n. sp., ucamara* n. sp., *altamazonicum*) (notes) 724-731; freshwater stream fishes (49 spp.) (small hab. diff. w/in small tropical streams strongly aff. fish assemblage) 751-764; *Noturus (fasciatus) n. sp., crypticus* n. sp.) (notes) 783-802; *Creagrutus guanensis* n. sp. (notes) 812-817; *Bungarus slowinskii* n. sp. (notes) 818-833; *Mustelus (hacal) n. sp., californicus, henlei, lunulatus, dorsalis* (depths) 834-845; *Glandium bockmanni* n. sp. (notes) 846-853; *Hapalogenus (sennini) n. sp., nigripinnis, nitens* = *nigripinnis* (notes) 854-867; *Bathygobius (fuscus, sp.)*, *Periophthalmus kalolo* (air-breathing & non-air-breathing beh. & physiol. adapt. to extreme diel temp. fluct.) 886-893; *Hoplocephalus bungaroides*, *Oedura lesuerrei* (incr. veg. cover due to fire suppression, conserv. implcs. for endngrd. sp. & its prey sp.) 894-900; *Atelognathus patagonicus* (microhabits, density var. by hab. by seas.) 921-929.
- HEARING**, *Albericus exclamitans* n. sp. (hidden tympana in males unique in genus) 312-319.
- HERMAPHRODITISM**, *Dascyllus melanurus* (soc. beh. diff. btwn. popns. rel. to sex change freq. diff.) 732-744.
- HISTOLOGY**, *Dascyllus melanurus* (gonad devel. in sex change) 732-744.
- HORMONES**, *Hyla regilla* (corticosterone levels, rel. to growth reduction in tdpds.) 424-430.
- HYBRIDIZATION**, *Scaphiophryne (menabensis) n. sp., marmorata, madagascariensis* (could be involved in n. sp.) 252-261; *Cyprinodon* (24 of 29 SW. N. Amer. spp., 11 of 20 E. N. Amer. & W. Indies spp.), *Jordanellea floridana*, *Cualac tessellatus*, *Megapsilon aporus* (confounds phyl. anal., informs biogeogr.) 320-339; *Lepomis* (all 12 spp.) (confounds monophyly of some spp.) 340-346; *Iopsetta isolepis* x *Parophrys vetulus* (natural hybrids, 1 adult, 1 juv.) 673-677.
- LARVAE**, *Gymnotus (carapo, mamiraua)* (descripts. of electric organ dischgs. for larvae & adults) 48-60; *Pogonichthys macrolepidotus* (& juveniles further upstream than previous evid., conserv. implcs.) 159-168; *Hyla versicolor* (pred. chem. cues at egg stage aff. larval develop.) 169-173; *Mantidactylus (elegans, madecassus)*, *Boophis laurenti* (descripts. based on mtDNA sp. ident. of tdpds.) 174-183; *Litoria (genimaculata, lesueuri)*, *Rana (septentrionalis, sylvatica)* (buoyancy control in frog larvae) 188-195; *Scaphiophryne menabensis* n. sp. (describe) 252-261; *Hyla regilla* (corticosterone levels, rel. to growth reduction in tdpds.) 424-430; *Leptodactylus labyrinthicus* (larval devel. in foam nests & after leave nests, oophagy) 803-811; *Rana sylvatica*, *Anax junius*

(body zones & kill probs. of dragonfly naiaid strikes on tpls.) 909–913.

LATERAL LINE, *Silvinichthys bortayro* n. sp. (reduced latero-sensory canal syst. of skull) 100–108.

LIFE HISTORY, *Scaphiophryne menabensis* n. sp. (notes on reprod., ecol., syntopic tpls.) 252–261; *Heterandria formosa* (popn. diff. in matrotrophy mechanisms, illumin. other life hist. relationships) 649–656; *Kinosternon subrubrum*, *Sternotherus odoratus*, *Pseudemys floridana* (clutch & egg size var. rel. to optimal egg-size & phenotypic plasticity models of reprod. allocation) 868–879.

LOCOMOTION, 9 SE U.S. snake spp. (road-crossing success var. btwn. spp.) 772–782.

METABOLISM, *Dipsosaurus dorsalis* (herbiv. vs. carniv. diets prod. diff. ptns. of thermoreg., relates to energy conserv.) 12–19.

METHODS, *Mantidactylus (elegans, madecassus)*, *Boophis laurenti* (sp. ident. method for tpls.) 174–183; *Lepidocheles kempii* (radio-immunoassay effective in sex determ. of juvs.) 393–398; *Heterandria formosa*, *Poecilia reticulata*, *Gambusia (affinis, geiseri)* (non-radioactive method to assess matrotropy) 632–636.

MICROSATELLITE DNA, *Notropis mekistocholas* (in gen. var. in captive vs. wild popns.) 20–28; *Coregonus* (19 popns. in 8 lakes) (in anal. of evol. by homoplasy) 347–358.

MIGRATION, *Pogonichthys macrolepidotus* (of young-of-yr. from upstream to estuaries) 159–168; *Rhizoprionodon terraenovae* (evid. for geogr. sex. segregation in adults, neonate migr. to inshore hab.) 914–920.

MIMICRY, *Ensatinas eschscholtzii xanthoptica* (evid. for aposematic coloration, possible Batesian mimicry) 265–271.

MITOCHONDRIAL DNA, *Notropis mekistocholas* (in gen. var. in captive vs. wild popns.) 20–28; *Mantidactylus (elegans, madecassus)*, *Boophis laurenti* (sp. ident. method for tpls.) 174–183; *Scaphiophryne (menabensis* n. sp., *marmorata*, *madagascariensis*) (in phyl. anal. of these 3 spp. & other congeners) 252–261; *Cottus* (36 of 42 recognized spp., 6 undescr. spp.), *Leptocottus armatus*, 4 other Cottid genera (in clad. anal. of *Cottus* & taxa disrupting *Cottus* monophly) 303–311; *Cyprinodon* (24 of 29 SW. N. Amer. spp., 11 of 20 E. N. Amer. & W. Indies spp.), *Jordanella floridae*, *Cualac tesselatus*, *Megapsilon aporus* (in biogeogr. & evol. of *Cyprinodon* from *Megapsilon*, incomplete info. from mtDNA) 320–339; *Lepomis* (all 12 spp.) (in phyl. anal.) 340–346; *Astyanax mexicanus* (in estim. of gene flow btwn. cave & surface popns.) 409–416; *Pseudoeurycea (papenfussi* n. sp., *obesa* n. sp.) (in phyl. anal.) 461–469; *Eleutherodactylus (bipunctatus* n. sp., *aniptopalmatus* n. sp., *rhabdocnemus* n. sp., *stictogaster* n. sp.) (in phyl. anal.) 526–538; *Bungarus* (*bungaroides*, *slowinskii* n. sp.) (in phyl. anal.) 818–833.

MORPHOLOGY, *Cyprinodon tularosa* (morph. chngs. after transloc. of thrtnd. sp. to new habs.) 1–11; *Symbolophorus (reversus* n. sp., *evermanni*) (of supracaudal gland, disting. n. sp.) 138–145; *Albericus exclamans* n. sp. (hidden tympana in males unique in genus) 312–319; Cichlids (Lake Tanganyika: 48 spp., Lake Malawi: 48 spp.) (anal. of shape diversity using geometric morphometrics, greater divers. in Lake Tanganyika) 359–373; *Asterorhombus* (7 spp.: 3 removed to *Engyprosopon*, *A. fijiensis* = *A. cocosensis*) (separate 1st dorsal fin ray w/ esca) 445–460.

NESTING, *Gymnotus (carapo, mamiraua)* (nesting & paternal care, speculation on funct. of electric organ dischg. in nesting) 48–60; *Leptodactylus labyrinthicus* (larval devel. in foam nests & after leave nests, oophagy) 803–811.

NOMENCLATURE, *Barbodes laticeps* = *Linichthys* n. gen. *laticeps* (*B. laticeps* needs n. gen. because *Barbodes* is junior syn. of 2 diff. genera not appropriate for *B. laticeps*) 61–67; *Nemuroglanis (lanceolatus, pauciradiatus)*, *Imparales mariae* & *Medemichthys guayaberensis* = *Nemuroglanis mariae* (synon. genera & spp.) 124–137; *Huia (masonii, javana = masonii)* (synon. spp.) 279–289; *Asterorhombus* (7 spp.: 3 removed to *Engyprosopon*, *A. fijiensis* = *A. cocosensis*) 445–460; *Sturisoma kneri* n. sp. (discuss valid. of *Loricaria kneri*, *S. kneri* made available) 559–565; *Megalechis personata* = *M. thoracata*, *Megalechis thoracata* = *M. picta* (examin. of *Callichthys* holotypes leads to these confusing name changes) 678–682; *Hapalogenys (sennini* n. sp., *nigripinnis*, *nitens* = *nigripinnis*) (n. sp. from specimens identified as *H. nigripinnis*; redescr. *H. nigripinnis* from type specimens & other specimens identified as *H. nitens*, therefore *H. nitens* = *H. nigripinnis*) 854–867.

OSTEOLOGY, *Ptilichthys goodei* (juv. specimens mainly, discuss axial elongation) 571–585; *Lobotes surinamensis*, *Datnioides quadrifasciatus* (oral jaws w/ dentition, unique tooth replcmnt. ptn.) 665–672.

PALEONTOLOGY, *Acentrophryne* sp. (fossil) (California Miocene) 246–251.

PATHOGENS, *Atelognathus patagonicus* (endngrd. sp., evid. of disease in lg. % of metamorphic tpls. & metamorphs) 921–929.

PHYLOGENETIC ANALYSIS, *Silvinichthys (bortayro* n. sp., *mendozensis*) (notes on genus & Trichomycterid subfams.) 100–108; *Pseudanodus (winterbottomi* n. sp., *gracilis*) (clad. anal. of Anostominae, uncert. for *P. winterbottomi* n. sp.) 109–123; *Nemuroglanis (lanceolatus, pauciradiatus)*, *Imparales mariae* & *Medemichthys guayaberensis* = *Nemuroglanis mariae* (clad. anal. of *Nemuroglanis*, *Imparales*, *Medemichthys*, syn. *I. mariae* into *Nemuroglanis* & *Medemichthys* into *N. mariae*) 124–137; *Scaphiophryne (menabensis* n. sp., *marmorata*, *madagascariensis*) (clad. anal., mtDNA

data, these 3 spp. & other congeners) 252–261; *Cottus* (36 of 42 recognized spp., 6 undescri. spp.), *Leptocottus armatus*, 4 other Cottid genera (clad. anal. of *Cottus* & taxa disrupting *Cottus* monophly) 303–311; *Cyprinodon* (24 of 29 SW. N. Amer. spp., 11 of 20 E. N. Amer. & W. Indies spp.), *Jordanella floridae*, *Cualac tesselatus*, *Megapsilon aporus* (clad. anal., *Cyprinodon* sister to *Megapsilon*, mtDNA & allozyme data) 320–339; *Lepomis* (all 12 spp.) (clad. anal. of genus, mtDNA data, sister spp., hybrid confounds some spp. monophly, possible cryptic spp.) 340–346; *Coregonus* (19 popns. in 8 lakes) (clad. anal. of genus using phenotypic & ecol. data, signif. of homoplasy) 347–358; *Pseudoeurycea (papenfussi)* n. sp., *obesa* n. sp.) (phyl. rels., mtDNA data) 461–469; *Brachyplatystoma capapetatum* n. sp. (clad. anal., morph. charcs.; new tribe for *B.*, and *Platynemichthys*, *Goslinia* & *Merdontotus* = *B.*; subgenus *Malacobagrus* incl. n. sp. & 2 other spp., *B. filamentosum* is sister to n. sp.) 492–516; *Eleutherodactylus (bipunctatus)* n. sp., *aniptopalmatus* n. sp., *rhabdocnemus* n. sp., *stictogaster* n. sp.) (clad. anal. of some Peru *Eleutherodactylus* & *Phrynobius* incl. the n. spp., mtDNA data, genera not monophly) 526–538; *Creagrutus guanensis* n. sp. (clad. anal. using char. states of Vari & Harold, 2001, not closely rel. to trans-Andean congeners) 812–817; *Bungarus (bungaroides, slownskii)* n. sp.) (clad. anal., mtDNA data, *B. bungaroides* is sister to n. sp.) 818–833.

PHYSIOLOGY, *Alopis vulpinus* (aerobic muscle temp. increase during swimming) 146–151; *Litoria (genimaculata, lesueuri)*, *Rana (septentrionalis, sylvatica)* (buoyancy control in frog larvae) 188–195; *Aspidoscelis inornata*, *Holbrookia maculata*, *Sceloporus undulatus* (coloration plasticity among color morphs) 586–596; *Sceloporus undulatus* (sex dichromatism regulated by testosterone) 597–608; *Lampropholis (guichenoti, delicata)*, *Physignathus lesueuri* (egg shell chem. comp. & struct.) 683–692; *Bathygobius (fuscus, sp.)*, *Periophthalmus kalolo* (higher temp. var. toler. & lower ox. consump. var. in non-air-breathing spp. vs. air-breathing sp. in extreme hab.) 886–893.

POPULATIONS, *Cyprinodon tularosa* (new popns. of thrnd. sp. transloc. to new hab., body shape chngs.) 1–11; *Notropis mekistocholas* (effective popn. size in captive popn.) 20–28; *Coregonus* (19 popns. in 8 lakes) (complex of homoplasious & homologous charcs. separate popns., unique in nature) 347–358; *Agkistrodon piscivorus* (import. of buffer zones around riparian hab. for gravid females) 399–402; *Astyanax mexicanus* (gene flow btwn. cave & surface popns.) 409–416; *Elaphe quatuorlineata* (body size & diet diff. btwn. popns. in diff. hab.) 517–525; *Eleutherodactylus johnstonei* (reprod. ecol. of introd. popn., success as invader rel. to reprod. flex.) 642–648; *Heterandria formosa* (popn. diff. in matrotrophy mechanisms) 649–656; *Microlophus peruvianus* (active body temps.

diff. btwn. popns. in warmer & colder habs.) 713–723; *Dascyllus melanurus* (soc. beh. diff. btwn. popns. rel. to sex change freq. diff.) 732–744; *Boa constrictor* (island snakes differ from mainland popns., island popns. endngrd. by pet trade) 880–885.

PREDATION, *Notropis topeka*, *Micropterus salmoides*, *Cyprinella lutrensis*, *Pimephales notatus*, *Luxilus cornutus* (minnow hab. use differs, not explains severe pred. eff. of *M. salmoides* on endngrd. *N. topeka*) 38–47; *Hyla versicolor* (pred. chem. cues at egg stage aff. larval develop.) 169–173; *Vermicella annulata*, *Ramphotyphlops nigrescens* (preds. [V. annulata] follow chem. trails of prey [R. nigrescens]) 184–187; *Sistrurus miliaris* (factors affecting striking & fleeing in pred. defence) 196–200; *Ensatina escholtzii xanthoptica* (evid. for aposematic coloration, possible Batesian mimicry) 265–271; Cichlids (Lake Tanganyika: 48 spp., Lake Malawi: 48 spp.) (shape diversity greater in piscivorous than in other Cichlids) 359–373; *Lapemis curtus* (stom. conts. evid. for ambush foraging) 637–641; *Leptodactylus labyrinthicus* (oophagy both w/in foam nests & after tpls. leave nests) 803–811; *Rana sylvatica*, *Anax junius* (body zones & kill probs. of dragonfly naia strikes on tpls.) 909–913.

REPRODUCTION, *Philautus (bobingeri)* n. sp., *graminirupes* n. sp.) (notes) 29–37; *Gynnotus (carapo, mamiraua)* (nest. & paternal care, speculation on funct. of electric organ dischg. in nesting) 48–60; *Crotalus atrox* (reprod. ecol., seas., delayed vitellogenesis, litter size, neonate sex ratio equal, male neonates larger, less than annual parturition) 152–158; *Heterodontus omanensis* n. sp. (unique egg case) 262–264; *Agkistrodon piscivorus* (import. of buffer zones around riparian hab. for gravid females) 399–402; *Rana dalmatina* (no male mate choice) 403–408; *Malaclemys terrapin* (egg comparison btwn. clutches) 417–423; *Heterandria formosa*, *Poecilia reticulata*, *Gambusia (affinis, geiseri)* (non-radiative method to assess matrotrophy) 632–636; *Eleutherodactylus johnstonei* (reprod. ecol. of introd. popn., success as invader rel. to reprod. flex.) 642–648; *Heterandria formosa* (popn. diff. in matrotrophy mechanisms) 649–656; *Lethrinops c.f. parvidens* (experim. evid. for female choice of male beh. trait) 657–660; *Lampropholis (guichenoti, delicata)*, *Physignathus lesueuri* (egg shell chem. comp. & struct., P. lesueuri shares 1 trait w/ the Tuataras) 683–692; *Dascyllus melanurus* (soc. beh. diff. btwn. popns. rel. to sex change freq. diff.) 732–744; *Leptodactylus labyrinthicus* (larval devel. in foam nests & after leave nests, oophagy) 803–811; *Mustelus (hacat n. sp., lunulatus)* (notes) 834–845; *Kinosternon subrubrum*, *Sternotherus odoratus*, *Pseudemys floridana* (clutch & egg size var. rel. to optimal egg-size & phenotypic plasticity models of reprod. allocation) 868–879; *Rhizoprionodon terraenovae* (evid. for geogr. sex. segregation in adults, neonate

- migr. to inshore hab.) 914–920; *Thamnophis elegans* (eff. of temp. on embryo mortal., evid. for coadapt. of thermoreg. & embryo devel. & adult perform.) 930–934.
- RESPIRATION**, *Gymnotus (obscurus n. sp., varzea n. sp., cucupira n. sp.)* (descript. of air-breathing) 82–99; *Bathygobius (fuscus, sp.)*, *Periophthalmus kalolo* (higher temp. var. toler. & lower ox. consumpt. var. in non-air-breathing spp. vs. air-breathing sp. in extreme hab.) 886–893.
- SALINITY**, *Pogonichthys macrolepidotus* (young-of-yr. far upstream, migr. to estuaries, conserv. implics.) 159–168.
- SEX**, *Dascyllus melanurus* (soc. beh. diff. btwn. popns. rel. to sex change freq. diff.) 732–744.
- SEX RATIO**, *Crotalus atrox* (neonate sex ratio equal) 152–158; *Lepidochelys kempii* (female bias in FL popn. due to incub. temp.) 393–398.
- SEXUAL DIMORPHISM**, *Symbolophorus reversus* n. sp. (of supracaudal gland) 138–145; *Albericus exclamitanus* n. sp. (hidden tympana in males unique in genus) 312–319; *Asterorhombus (cocosensis, filifer)* (in interorbital width) 445–460; *Elaphe quatuorlineata* (females larger) 517–525; *Sceloporus undulatus* (sex. dichromatism regulated by testosterone) 597–608; *Glanidium bockmanni* n. sp. (highly modif. anal fin in males) 846–853.
- SIZE**, *Malaclemys terrapin* (compare egg size & components among clutches) 417–423; *Elaphe quatuorlineata* (body size: gender & hab. diff.) 517–525; *Eleutherodactylus johnstonei* (greater clutch sizes in larger females) 642–648; *Kinosternon subrubrum*, *Sternotherus odoratus*, *Pseudemys floridana* (clutch & egg size var. rel. to optimal egg-size & phenotypic plasticity models of reprod. allocation) 868–879; *Boa constrictor* (body size, neonate size & popn. sizes much smaller in island vs. mainland popns.) 880–885.
- SUPRACAUDAL GLAND**, *Symbolophorus (reversus n. sp., evermanni)* (morph. in n. sp. unique) 138–145.
- SYSTEMATICS**, *Philautus (bobingeri n. sp., graminirupes n. sp.)* (n. spp., compare to close rels.) 29–37; *Barbodes laticeps* = *Linichthys* n. gen. *laticeps* (redescript., compare to similar *Typhlobarbus nudiventris*) 61–67; *Trichomycterus gorgona* n. sp. (n. sp., compare to congeners & other Gorgona Is. fishes) 68–76; *Lasionyathus amphirhamphus* n. sp. (n. sp., compare to congeners, key to the 5 spp. of genus) 77–81; *Gymnotus (obscurus n. sp., varzea n. sp., cucupira n. sp.)* (3 sympatric n. spp.) 82–99; *Silvinichthys (bortayro n. sp., mendensis)* (n. sp., compare to congener, phyl. notes) 100–108; *Pseudanos (winterbottomi n. sp., gracilis)* (n. sp., compare n. sp. to *P. gracilis*, phyl. anal. & key to genera & spp. of Anostominae) 109–123; *Nemuroglanis (lanceolatus, pauciradiatus)*, *Imparales mariae* & *Medemichthys guayabensis* = *Nemuroglanis mariae* (phyl. anal. of *Nemuroglanis*, *Imparales*, *Medemichthys*; syn. *I. mariae* into *Nemuroglanis* & *Medemichthys* into *N. mariae*) 124–137; *Symbolophorus (reversus n. sp., evermanni)* (n. sp. compared to congeners, *S. evermanni* closest rel., n. sp. supracaudal gland morph. unique) 138–145; *Bolitoglossa copia* n. sp. (describe sp.) 223–226; *Bolitoglossa (anthracina, copia, nigrescens, robusta, magnifica n. sp., obscura n. sp., sombra n. sp.)* (describe n. spp., redescr. *B. robusta* & *B. nigrescens*, compare all 7 spp.) 227–245; *Acentrophryne (longidens, dolichonema n. sp., sp. [fossil])* (n. sp., revise genus) 246–251; *Scaphiophryne (menabensis n. sp., marmorata, madagascariensis)* (n. sp., compare to congeners, phyl. anal. of genus, mtDNA data) 252–261; *Heterodontus omanensis* n. sp. (n. sp., unique egg case) 262–264; *Jupiaba poekotero* n. sp. (n. sp., phyl. notes on rel. w/ congeners) 272–278; *Huia (absita n. sp., melasma n. sp., masonii, javana = masonii)* (n. spp., expand descript. of *H. masonii*, compare to all congeners) 279–289; *Puntius (tiantian n. sp., didi n. sp.)* (n. spp. in *P. conchonius* sp. group, assign several other spp. to this sp. group, n. spp. compared in detail to congeners) 290–302; *Cottus* (36 of 42 recognized spp., 6 undescr. spp.), *Leptocottus armatus*, 4 other Cottid genera (phyl. anal. of *Cottus* & taxa disrupting *Cottus* monophly) 303–311; *Albericus exclamitanus* n. sp. (call & hidden tympana in males unique in genus) 312–319; *Cyprinodon* (24 of 29 SW. N. Amer. spp., 11 of 20 E. N. Amer. & W. Indies spp.), *Jordanella floridae*, *Cualac tessellatus*, *Megupsilon aporus* (phyl. anal., mtDNA & allozyme data, hybrid involved, *Cyprinodon* sister to *Megupsilon*) 320–339; *Lepomis* (all 12 spp.) (phyl. anal. of genus, mtDNA data, genus monophyletic, support for most subgenera, problems w/ several spp.) 340–346; *Myxine (jespersenae n. sp., glutinosa)* (n. sp. compared to congeners, n. sp. deeper hab. than sympat. *M. glutinosa*) 374–385; *Bryconamericus turiuba* n. sp. (n. sp. compared to congeners) 386–392; *Asterorhombus* (7 spp.: 3 removed to *Engyprosopon*, *A. fijiensis* = *A. cocosensis*) (redefine genus, key to the 3 valid spp., all have esca on 1st dorsal fin ray) 445–460; *Pseudoeurycea (paperfussi n. sp., obesa n. sp.)* (n. spp., spp. groups, closest rels., sister spp., mtDNA data) 461–469; *Etropus ciadi* n. sp. (n. sp., closest rels.) 470–478; *Phrynosopus (bufoides n. sp., paucari n. sp., pesantisi n. sp.)* (n. spp., compare to congeners) 479–491; *Brachyplatystoma capapretum* n. sp. (n. sp.; phyl. anal.; new tribe for *B.* & *Platynematicithys*; *Gostinia* & *Merodontotus* = *B.*; subgenus *Malacobagrus* incl. n. sp. & 2 other spp., *B. filamentosum* is sister to n. sp.) 492–516; *Eleutherodactylus (bipunctatus n. sp., aniptopalmatius n. sp., rhabdocnemus n. sp., stictogaster n. sp.)* (n. spp., determ. sp. groups, phyl. anal., mtDNA data) 526–538; *Pareiorhina (brachyhynchia n. sp., rudolphi)* (n. sp., compare to sympatric *P. rudolphi*, key to spp. of genus) 550–558; *Sturisoma kneri* n. sp. (n. sp. discuss valid. of *Loricaria kneri*, *S. kneri* made available) 559–565; *Clupisoma nuijiangense* n. sp. (n. sp., compare to congeners) 566–570; *Phallotorynus (fasciolatus, victoriae, jucundus, dispilos* n. sp.,

psittakos n. sp., *pankalos* n. sp.) (revise genus, redescribe 3 spp., describe 3 n. spp., histor. biogeogr., key to spp.) 609-631; *Lobotes surinamensis*, *Datnioides quadrifasciatus* (unique tooth replcmnt. ptn.: possible synap. for the 2 genera) 665-672; *Megalechis personata* = *M. thoracata*, *Megalechis thoracata* = *M. picta* (describe *M. thoracata* & *M. picta*, examin. of *Callichthys* holotypes leads to these confusing name changes) 678-682; *Leptoplosternum (stellatum)* n. sp., *ucamara* n. sp., *altamazonicum*) (n. spp., compare to congeners, key to the 6 spp. of genus) 724-731; *Pseudomystus (sorbinus)* n. sp., *siamensis*, *bomboides*) (n. sp., compare to close rels.) 745-750; *Parodon moreirai* n. sp. (n. sp., compare to congeners & *Apareiodon*, dentition & some other traits sim. to *Apareiodon*) 765-771; *Noturus (elegans, fasciatus)* n. sp., *crypticus* n. sp.) (2 n. spp. described from popns. previously considered *N. elegans*, also compared to some other congeners) 783-802; *Creagrutus guanes* n. sp. (n. sp., phyl. anal., not closely rel. to trans-Andean congeners) 812-817; *Bungarus (bungaroides, slowinskii)* n. sp.) (n. sp., phyl. anal., *B. bungaroides* is sister to n.sp., biogeogr. & mtDNA evid. for vicariant speciation) 818-833; *Mustelus (hacat)* n. sp., *californicus*, *henlei*, *lunulatus*, *dorsalis*) (n. sp., compare to NE Pacific congeners, key to the 5 spp.) 834-845; *Glanidium bockmanni* n. sp. (n. sp., compare to congeners, possible problems w/ monophyly of genus) 846-853; *Hapalogenys (sennin)* n. sp., *nigripinnis*,

nitens = *nigripinnis*) (n. sp. from specimens identified as *H. nigripinnis*; redescr. *H. nigripinnis* from type specimens & other specimens identified as *H. nitens*, therefore *H. nitens* = *H. nigripinnis*) 854-867.

TEMPERATURE, *Dipsosaurus dorsalis* (herbiv. vs. carniv. diets prod. diff. ptns. of thermoreg., relates to energy conserv.) 12-19; *Alopias vulpinus* (aerobic muscle temp. increase during swimming) 146-151; *Lepidochelys kempii* (female bias in FL popn. due to incub. temp.) 393-398; *Microlophus peruvianus* (active body temps. diff. btwn. popns. in warmer & colder habs.) 713-723; *Bathygobius (fuscus)* sp., *Periophthalmus kalolo* (air-breathing & non-air-breathing beh. & physiol. adapt. to extreme diel temp. fluct.) 886-893; *Hoplocephalus bungaroides*, *Oedura lesuerii* (reduced temp. in rock refugia due to fire suppression, conserv. implics. for endngrd. sp. & its prey sp.) 894-900; *Rhizoprionodon terraenovae* (heat stress & hypoxia may aff. adult male abund. in Miss. Sound) 914-920; *Thamnophis elegans* (eff. of temp. on embryo mortal., evid. for coadapt. of thermoreg. & embryo devel. & adult perform.) 930-934.

TOXICITY, *Ensatina escholtzii xanthoptica* (evid. for aposematic coloration) 265-271.

VISION, *Silvinichthys bortayro* n. sp. (reduced eye on phreatic catfish) 100-108.